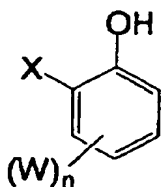


WHAT IS CLAIMED IS:

1. A heat mode-compatible positive-type image-forming material comprising (a) a water-insoluble, aqueous alkaline solution-soluble polymer compound, (b) a light-heat converting agent and (c) a phenol including a partial structure represented by the following formula (I), the positive-type image-forming material exhibiting an increase in solubility in an aqueous alkaline solution when the positive-type image-forming material is heated:



Formula (I)

wherein:

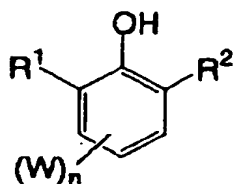
X represents a monovalent terminal group having 2 or more carbon atoms or a linking group represented by $-CY^1Y^2-$ or $-CHY^1-$ in which Y^1 and Y^2 each represent monovalent terminal groups having 1 or more carbon atoms;

W represents a monovalent terminal group; and

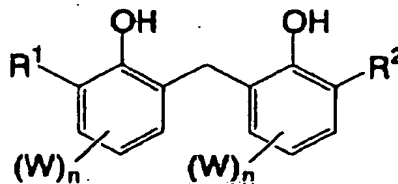
n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

2. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure

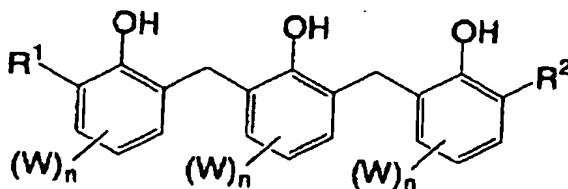
represented by formula (I) is a phenol selected from the group consisting of phenol compounds represented by the following formulas (II), (III) and (IV):



Formula (II)



Formula (III)



Formula (IV)

wherein:

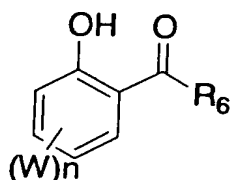
R^1 and R^2 may be the same or different, and at least one of R^1 and R^2 represents a monovalent organic group having 3 or more carbon atoms;

W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

3. The heat mode-compatible positive-type image-forming material

according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (XII):



Formula (XII)

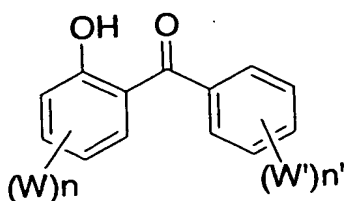
wherein:

R^6 represents a monovalent organic group having 2 or more carbon atoms;

W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

4. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (XIII):



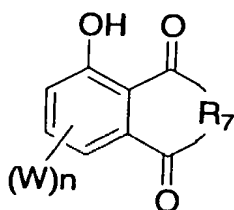
Formula (XIII)

wherein:

W and W' each represent monovalent terminal groups; and

n represents an integer of 1 to 4, and n' represents an integer of 1 to 5, but if n and n' are both 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group and the groups represented by W' may be the same or different and may be connected to each other via a linking group.

5. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (XIV):



Formula (XIV)

wherein:

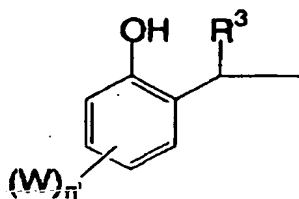
R⁷ represents an alkyl group having 1 to 20 carbon atoms;

W represents a monovalent terminal group; and

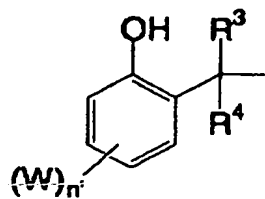
n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

6. The heat mode-compatible positive-type image-forming material

according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (V) or (VI):



Formula (V)



Formula (VI)

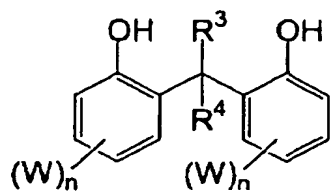
wherein:

R^3 and R^4 , may be the same or different, each represent a monovalent organic group;

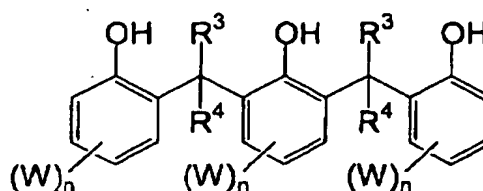
W represents a monovalent terminal group; and

n' represents an integer of 1 to 4, but if n' is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

7. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the group consisting of phenol compounds represented by the following formulas (VII) and (VIII):



Formula (VII)



Formula (VIII)

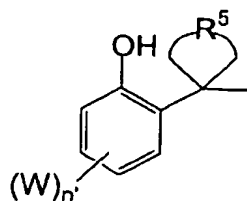
wherein:

R^3 and R^4 , which may be the same or different, each represent a hydrogen atom or a monovalent organic group, but R^3 and R^4 are not both a hydrogen atom;

W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

8. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (IX):



Formula (IX)

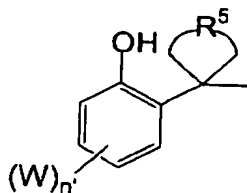
wherein:

R^5 represents a divalent organic group;

W represents a monovalent terminal group; and

n' represents an integer of 1 to 4, but if n' is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

9. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds including a partial structure represented by the following formula (IX):



Formula (IX)

wherein:

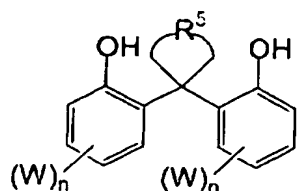
R^5 represents a divalent organic group having 3 to 6 carbon atoms;

W represents a monovalent terminal group; and

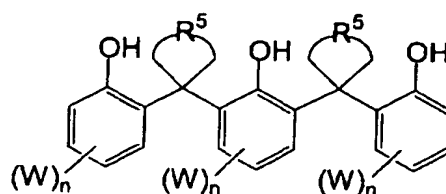
n' represents an integer of 1 to 4, but if n' is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

10. The heat mode-compatible positive-type image-forming material

according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds represented by the following formulas (X) and (XI):



Formula (X)



Formula (XI)

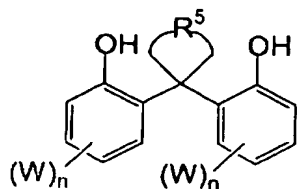
wherein:

R^5 represents a divalent organic group;

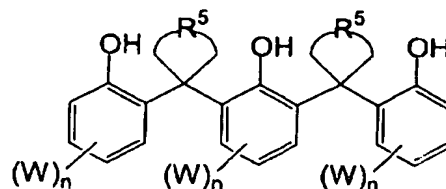
W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

11. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is a phenol selected from the phenol compounds represented by the following formulas (X) and (XI):



Formula (X)



Formula (XI)

wherein:

R⁵ represents a divalent organic group having 3 to 6 carbon atoms;

W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.

12. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) has a molecular weight of at most 1,500.

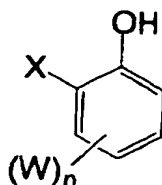
13. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) has a molecular weight in the range of 200 to 1,200.

14. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is contained in an amount of 0.1 to 50% by weight relative to total solid content of the positive-type image-forming material.

15. The heat mode-compatible positive-type image-forming material according to claim 1, wherein the phenol including a partial structure represented by formula (I) is contained in an amount of 0.5 to 30% by

weight relative to total solid content of the positive-type image-forming material.

16. A planographic printing plate precursor which comprises, on a substrate, a recording layer which includes a positive-type image-forming material including: (a) a water-insoluble, aqueous alkaline solution-soluble polymer compound, (b) a light-heat converting agent and (c) a phenol including a partial structure represented by the following formula (I), the positive-type image-forming material exhibiting an increase in solubility in an aqueous alkaline solution when the positive-type image-forming material is heated:



Formula (I)

wherein:

X represents a monovalent terminal group having 2 or more carbon atoms or a linking group represented by $-CY^1Y^2-$ or $-CHY^1-$ in which Y^1 and Y^2 each represent monovalent terminal groups having 1 or more carbon atoms;

W represents a monovalent terminal group; and

n represents an integer of 1 to 4, but if n is 2 or more, the groups represented by W may be the same or different and may be connected to each other via a linking group.